



Idaho Conservation League

Fire in Idaho: Lessons for Human Safety and Forest Health

A Review of Idaho's 2007 Fire Season

September 2008

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We wish to thank the Wilburforce and Wyss Foundations and over 9,000 members
for making this report possible

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The Idaho Conservation League preserves Idaho's clean water, wilderness and quality of life.

Executive Summary

The 2007 fire season is one Idahoans will remember for a long time. Nearly 2 million acres in Idaho were affected by more than a dozen fires, twice as many as in any other state. Four fires exceeded 100,000 acres. Taxpayers spent more than \$260 million managing Idaho's fires. In 2007, the Murphy Complex Fire was the nation's largest fire, impacting over 650,000 acres of rangeland in Idaho and Nevada.

Yet here is a point that is often overlooked: Even in the face of these fires, only 24 homes were damaged. To put that into perspective, 649 homes were damaged by other fires (electrical, cooking, etc.) in Idaho, so wildfires were only responsible for 3.6% of all house fires in 2007 (Karnowski 2008). Another often overlooked fact: No firefighters died on the firelines in Idaho.

Idaho's 2007 fire season represented a clear shift in how we manage wildfires. This shift is paying benefits that include better safeguarding of homes, property and human life, as well as wiser use of tax dollars *and* real benefits on the land.

Under extreme weather and fuel conditions, Forest Service fire managers implemented new strategies. A record number of low-risk fires were allowed to take their natural course, a practice called Wildland Fire Use. These remote fires didn't threaten homes, people or natural resources. These Wildland Fire Use fires carried several benefits. Money that would have been spent fighting them could be directed to more destructive fires. Firefighters were kept out of harm's way. And dead trees and brush that had built up for years were cleared, making the forest healthier and reducing the odds for a major blow-up in the future.

Still, the 2 million acres that burned during Idaho's 2007 fire season begged the question: Were the environmental effects from these fires unnatural? To answer this question, the Idaho Conservation League reviewed dozens of post-fire restoration plans. These plans, compiled by the Forest Service and Bureau of Land Management, evaluated the severity of Idaho's 2007 fires. According to these reports, more than half (57%) of the acres included in the fire boundaries were either unburned or burned at low severity. Only 16% of the acres within the fire perimeters burned at high severity.

Idahoans know that fire is a fact of life in the West. From sagebrush flats to alpine ridges, fire has been and will continue to be a component of Idaho's diverse ecosystems. Although no one likes to

breathe smoke in the summer, fires are a natural consequence of living in an arid, fire-prone landscape.

For decades, Idaho's land managers sought to put out every fire. Now, we've learned the errors of those ways. We understand that putting out small fires today means bigger, more destructive fires tomorrow. Necessary changes in fire control and management will better safeguard lives and homes, keep Idaho's forests and rangelands healthy and productive for future generations, and provide quality wildlife habitat. In addition, these changes can reduce the risks faced by firefighters *and* save tax dollars.

These new strategies will not work everywhere. But much of Idaho is well suited to dealing with fires in a more thoughtful way. Fire teams have more options across millions of acres of Idaho's remote natural areas. Idaho's land managers are leading the way as the rest of the country considers the future of managing fires.

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Key Findings

- Idaho experienced a very active 2007 fire season, with nearly 2 million acres burned and more than \$260 million spent on suppression.
- Both the Boise and Payette National Forests experienced record years, with 383,371 and 470,218 acres affected respectively.
- No firefighters or bystanders died in Idaho's 2007 fires.
- Some 24 homes were damaged, modest given the extent of the fires.
- Idaho led the nation in fires termed "Wildland Fire Use," with 188,063 acres, over 70% of all Wildland Fire Use acres nationwide.
- Forest Service fire managers are increasingly using new strategies that can reduce risks, limit costs and help restore forests.
- The Bureau of Land Management lags behind the Forest Service in the implementation of new fire-management strategies.
- The fires of 2007 burned in an essentially natural patchwork of light and hot burns; 16% of forests within fire perimeters burned with high severity, while more than half (57%) were lightly burned or not burned at all.

Background

In 2007, Idaho experienced one of its most active fire seasons ever. Nearly 2 million acres burned in the state, and over \$200 million was spent to control these fires (Smurthwaite 2008). Faced with hot and dry conditions, fire teams responded with a strategic approach to fire management.

Huge, deadly fire seasons, such as that of 1910, promoted a long-lasting government policy of indiscriminate and immediate suppression of all fires, everywhere. Gradually, scientists and land managers determined that putting out small fires leads to larger, more destructive fires in the future. Scientists also learned that many forest species depend on periodic fires.

By 1995, the Forest Service had shifted its thinking dramatically. That year, fire experts standardized national wildfire guidelines aimed at more effective and efficient fire management. The policy recognized the need to restore the ecological role of fire through prescribed burning and a practice called Wildland Fire Use. Wildland Fire Use allows natural fires to run their natural course where they do not threaten homes, people or the health of natural areas.

In 2001, government watchdog agencies reviewed the 1995 fire policy (U.S. Department of the Interior et al. 1995) and determined that many of the action items had not been implemented and fire management plans were outdated (National Academy of Public Administration 2001, General Accounting Office 2001).

In 2003, the Idaho Conservation League reviewed these plans for Idaho's national forests and Bureau of Land Management lands (Oppenheimer and Dickinson 2003). We found that many failed to reflect new policies. Five years later, Idaho's national forests have made great strides in modernizing their plans (U.S. Forest Service 2008a–g). While the Bureau of Land Management updated fire management plans in 2004 for each of its four districts, specific plans have not been written that include Wildland Fire Use (Bureau of Land Management 2004a–g). The Idaho Conservation League recognizes that the Bureau of Land Management faces many issues distinct from those faced by the Forest Service. The interspersed ownership associated with many Bureau of Land Management lands and the greater risk of invasive species such as cheat grass (*Bromus tectorum*) pose significant challenges. At the same time, the Bureau of Land Management has identified areas where Wildland Fire Use should be an option, yet the agency has failed to develop specific plans to implement this strategy (Bureau of Land Management 2004a–g, 2008).

Fire Management Strategies

Depending on a fire's location, the time of year, and the threat, fire teams apply various control strategies. Guided by fire management plans and on-the-ground knowledge, fire teams may apply one or more of these approaches on any given fire.

- **Perimeter Control**—The most common approach to suppression, perimeter control is an aggressive strategy to construct fire line or use natural features to surround and contain a fire.
- **Point Protection**—This strategy protects homes, businesses, campgrounds or other important features adjacent to or within a fire perimeter.
- **Monitor**—This strategy is used to track fire behavior and spread from the ground, aircraft or satellite. Monitoring reduces costs and the risks. When fires are assigned a “monitor” status, fire teams establish “trigger points” that prompt more direct action.



Firefighters digging a fire line (photo courtesy of Karen Wattenmaker)

Lessons from 2007

Idaho started 2007 with a below average snowpack, spring rains failed to materialize, and warm weather dominated the summer. As a result, much of the state faced moderate to extreme drought. As summer heat persisted, many forests became exceptionally dry. With lightning and wind exacerbating these conditions, subsequent fires were inevitable. The following review focuses on significant fires and agency responses; it is not a comprehensive review of all 2007 fires.

Significant Fires Around the State

The first major fire of the year started on July 16 along the Nevada border and spread extensively into Idaho. The Murphy Complex Fire ultimately burned 450,535 acres administered by the Bureau of Land Management in Idaho, lands dominated by grasses, sagebrush and juniper (Table 1). Drought conditions and high winds drove extreme burning conditions. Three outbuildings were burned by the fire (Brookings Institution 2008).

During and after suppression efforts on the Murphy Complex Fire, some of Idaho's elected leaders—among them, Sen. Craig, Sen. Crapo and Gov. Otter—were critical of the Bureau of Land Management's decision not to allow local residents to engage in fire-suppression activities, including construction of bulldozer fire lines. In 2000, two private citizens were injured while bulldozing a fire line near Salmon, Idaho, when the flames overran them (Barker 2008, Druzin 2007). The Bureau of Land Management has indicated a willingness to train more local residents for the fire lines. But given the fast movement of the flames, the Bureau of Land Management would have assumed liability by placing untrained citizens in the path of the flames.

Critics also argued that increased grazing before the fire season would have reduced fuel available for the fire (Druzin 2007). In response to these criticisms, a team of scientists evaluated the relationship between grazing and fire behavior on the Murphy Complex Fire. Their report found that "grazing levels probably had little effect on fire behavior" (Launchbaugh et al. 2008).

While not a major factor on the Murphy Complex Fire (Pellant 2008), many Bureau of Land Management lands are infested with nonnative cheat grass that outcompetes native grasses and dries out early in the summer. Cheat grass fires spread rapidly, and the nonnative grass quickly colonizes burned land. As a result, fires occur much more frequently and can effectively eliminate much of the native vegetation in Idaho's sagebrush and grassland ecosystems (Bureau of Land Management 1999).

Table 1 **Severity statistics for Idaho's large fires (2007), based on Forest Service and BLM data¹**

Fire	Severity			Unburned (%)	Acres Burned
	High (%)	Moderate (%)	Low (%)		
Lucky	3	35	41	21	1,582
Lightning	3	32	34	31	6,995
Sheep Trail	9	27	37	27	8,703
Cascade Complex South	35	4	50	11	155,711
Cascade Complex North	25	39	29	6	58,485
Cascade Complex Payette	27	28	17	28	37,598
Cascade Complex Salmon-Challis	11	34	26	29	31,013
East Zone Complex	38	27	19	16	300,022
Rattlesnake	10	26	25	39	101,077
Poe Cabin	8	15	74	4	58,700
Castle Rock (NF Acres)	24	37	21	19	45,894
Bridge Fire	4	35	22	40	42,101
Boundary Junction	5	19	38	38	5,081
Black Canyon	0	2	98	?	572
Wood (NF Acres)	0	0	100	?	1,882
Weston	0	0	100	?	375
Combine (NF Acres)	0	0	100	?	1,035
Black Pine 2 (NF Acres)	1	9	72	18	33,481
Showerbath Complex	13	27	19	41	122,600
Van Horn	4	23	17	56	1,650
Grays Creek	13	47	32	8	12,449.5
Murphy Complex	0	33	63	4	450,535
Total	16	27	41	15	1,477,541

¹ These figures are based on Forest Service or Bureau of Land Management acres, so they may not correspond to other acreage figures in this report.

By June, lightning had started several fires on the Payette National Forest (Figure 1). But the fire season did not start in earnest until July on the Payette. In that month, three separate lighting storms touched off 48 fires (Tily 2008). Because of extensive fire activity throughout the West and dry conditions in Idaho, fire managers on the Payette realized that machines and manpower

would be in short supply. They also recognized that it would be unrealistic and ineffective to dig fire lines around the entire perimeter of each fire or bombard the fires with retardant and smokejumpers. Instead, the Payette implemented a multipronged “Appropriate Management Response” strategy that accomplished the following (Brown 2008, U.S. Forest Service 2008h, Wildfire Lessons Learned Center 2007):

- Protected communities and recreational resources such as campgrounds.
- Developed “long-term implementation plans” to direct fire-control actions over several months.
- Considered Wildland Fire Use for remote, low-risk fires.
- Focused firefighting resources near towns and cities.

Long-term implementation plans “provide management direction for long duration wildfires based on an analysis of all factors affecting fire suppression capability and effectiveness, fiscal management, firefighter and public safety, values to be protected, and management objectives for the fire area” (Lasko 2008).



Point protection: wrapping a cabin on the Cascade Complex
(photo courtesy of Boise National Forest)

In remote communities (such as Burgdorf, Secesh, Warren and Yellow Pine), fire managers applied a “point protection” strategy to private property. To implement this strategy, fire teams

did not try to control the perimeter of the fire. Rather, they worked to protect specific points such as homes, communities, cultural sites and campgrounds within the direct path of the fire.

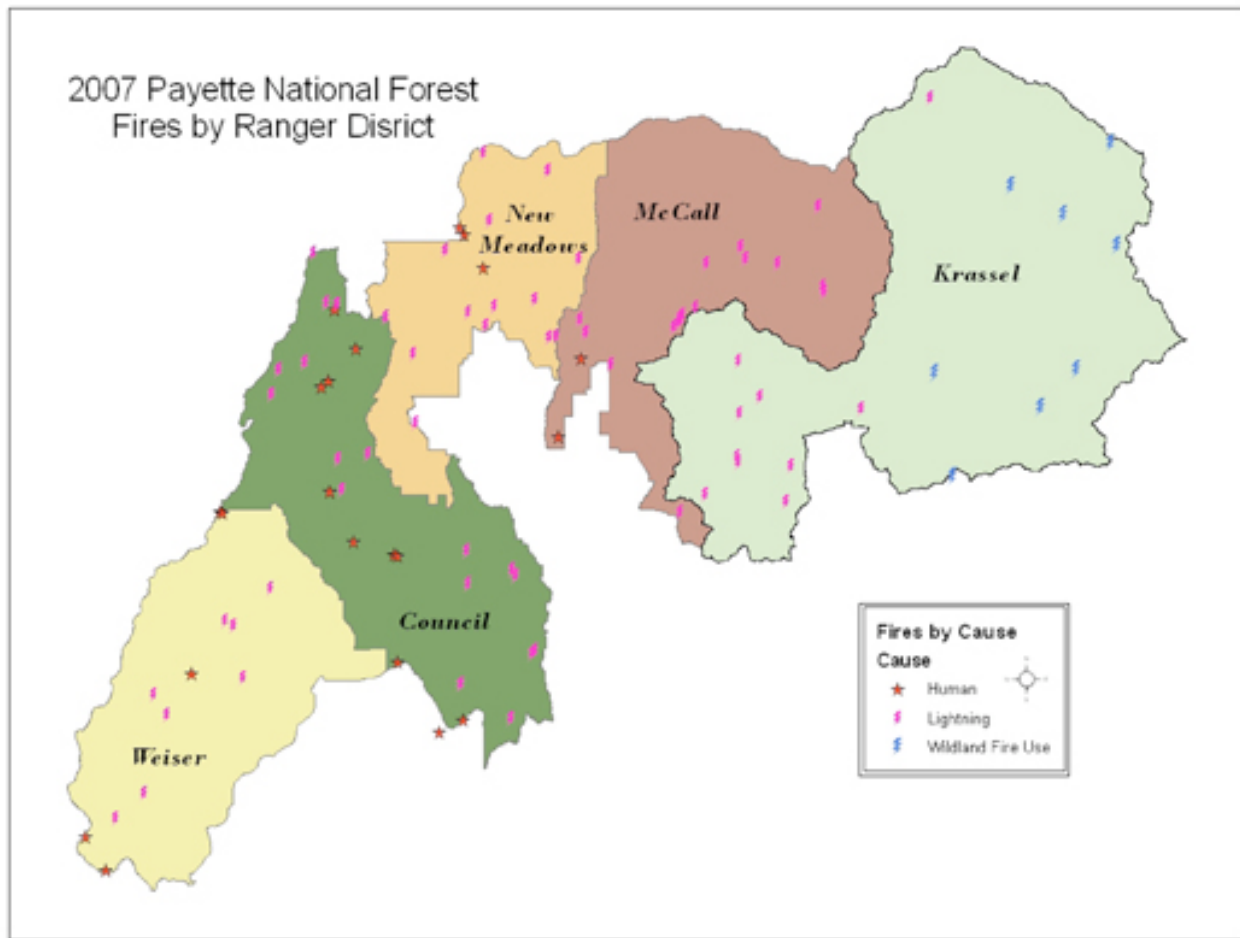


Figure 1 Locations and causes of fires on the Payette National Forest in 2007 (courtesy of USDA Forest Service)

The same lightning storms that swept over the Payette National Forest also ignited fires on the adjacent Boise National Forest. On July 17 alone, lightning started 48 fires on the Boise (Hislop 2007). Seven became large fires. One, the Trapper Ridge Fire, was designated a Wildland Fire Use fire. While the Payette had initiated long-term plans for fires that escaped initial attack, the Boise National Forest continued to try to control the fires through direct attack. In some cases, these strategies worked. In others, the flames repeatedly overran fire lines.

In response, the Boise National Forest shifted gears, developed long-term plans and focused on point protection to contain costs and better use firefighting resources (Pence 2008). Between the

Boise and Payette National Forests, the Cascade and East Zone Complex fires spread over nearly 600,000 acres (Table 1) and cost \$97 million (Tily 2008, U.S. Forest Service 2007a [referred to as BAER report]).



Cascade Complex fire (photo courtesy of Boise National Forest)

On the Clearwater National Forest, the Bridge Fire burned 42,101 acres (Table 1) (BAER report 2007). This represented 87% of all the acres burned on the Clearwater in 2007. Early in the year, fire managers in the Northern Rockies Region (which includes the Clearwater, Idaho Panhandle and Nez Perce National Forests, but not those of southern Idaho) implemented an Appropriate Management Response strategy (U.S. Forest Service 2008h, Wildfire Lessons Learned Center

2007). As a result of this strategy, when the Bridge Fire burned into the remote and rugged Selway-Bitterroot Wilderness Area where it posed few threats and could benefit the ecology, few direct resources were committed. Instead, a smaller team of firefighters was able to manage the fire. Suppression costs totaled only \$390,000, or less than \$9 per acre (BAER report 2007). Although technically classified as a Suppression Fire, on-the-ground management was similar to that for a Wildland Fire Use fire.

The Nez Perce National Forest saw 192,946 acres burned in 2007 (BAER report 2007). The Poe Cabin and Rattlesnake Fires accounted for the majority of this acreage. The Poe Cabin Fire burned 58,700 acres east of the Snake River in Hells Canyon (Table 1). Three homes were burned by the fire, along with nine outbuildings (Brookings Institution 2008). According to several accounts, a number of homeowners credited defensible space with saving their homes (U.S. Departments of the Interior and Agriculture 2008). By clearing brush and small trees and removing wood siding, shingles and woodpiles, homeowners dramatically reduced the risk of their homes burning down.

Also on the Nez Perce National Forest, the Rattlesnake Fire burned 101,077 acres along the Salmon River Breaks east of Riggins (Table 1). The fire threatened the remote community of Dixie as well as cabins and ranches along the river. Two cabins and two outbuildings were burned. Suppression costs topped \$17 million (\$168 per acre), making it the costliest fire in north-central Idaho (BAER report 2007). Other notable Idaho fires in that area included the 51,000-acre Chimney Complex Fire, managed by the Idaho Department of Lands, and the Moose Wildland Fire Use Complex in the Selway-Bitterroot Wilderness Area, the latter of which consisted of 22 fires covering approximately 40,000 acres (U.S. Forest Service 2007b).¹

On the Sawtooth National Forest, the Castle Rock Fire received national attention. On the edge of the Wood River Valley, this fire threatened to burn into Ketchum and Sun Valley and was the top national priority. The fire ended up covering 48,520 acres (45,894 of which were on National Forest lands; Table 1), and suppression costs topped \$30 million (BAER report 2007).

Fires in the vicinity of the Caribou-Targhee and Salmon-Challis National Forests burned 10,320 and 160,778 acres (Kidd 2008, Williams 2008) respectively. The majority of these acres were in

¹ This number includes all Wildland Fire Use acres associated with the Moose Complex Fire in 2007, while Table 2 includes only those acres that burned prior to the end of the fiscal year reporting period.

association with the Showerbath and Cascade Complex Fires on the Salmon-Challis that burned a little over 150,000 acres (Table 1).

The Idaho Panhandle National Forest experienced a quiet fire season with 226 acres burned (Grant 2008).

At the end of the fire season, the Forest Service calculated costs for its Northern Region, which spans North Idaho, Montana and South Dakota. Fire management costs totaled \$165 million to manage fire on 640,870 acres, or \$258 per acre. In comparison, the same region spent \$348 million in 2003 to manage fires on 367,538 acres, or \$947 per acre (U.S. Forest Service nd).

The fires of 2007 marked a turning point in the way that fires were managed. In many respects, Idaho's national forests are leading the way for more thoughtful fire management. With updated fire management plans, new policies, and millions of acres of remote land, Idaho is especially well suited to be a proving ground for these new strategies. As a result, fire can be restored to the landscape, risks can be reduced and costs can be kept under control.

Wildland Fire Use — Forest Service

Wildland Fire Use is the control and management of naturally ignited (usually lightning caused) wildland fires. In a nutshell, managers use natural fires to reach their goals, such as reducing dead and standing trees. These goals are outlined in fire management plans.

In 2007, Idaho led the nation in terms of Wildland Fire Use. Approximately 70 fires were managed by the Forest Service to reduce fuel for future fires and rejuvenate natural areas that covered 188,063 acres (Table 2). Nationally, the Forest Service's Wildland Fire Use program totaled 264,100 acres in 2007, meaning that Idaho's fires accounted for over 70% of all acres (U.S. Forest Service 2008h).

Table 2 **Numbers of Wildland Fire Use fires and affected acres, by national forest, in 2007**

National Forest	No. of Fires	Acres
Boise National Forest	1	20,159
Caribou-Targhee National Forest	7	3,113
Clearwater National Forest	17	11,626
Idaho Panhandle National Forest	1	1
Nez Perce National Forest	31	32,314
Payette National Forest	8	87,922
Salmon-Challis National Forest	4	32,363
Sawtooth National Forest	1	5
Total	70	188,063

Idaho fire teams have always played an important role in the development of national Wildland Fire Use strategies. On August 18, 1972, a lightning storm in the Selway-Bitterroot Wilderness ignited the first Wildland Fire Use fire in the country (Oppenheimer and Dickinson 2003). That fire burned only four days and a quarter acre before it was snuffed by rain. Nevertheless, it marked a historic turning point.

Since the 1970s, natural fires have been allowed to burn within predetermined boundaries, primarily in designated wilderness areas and some national parks. Until recently, designated wilderness areas were the focus of the Wildland Fire Use program. In 1999, Forest Service policy changed to allow Wildland Fire Use to be considered outside of wilderness areas (Oppenheimer and Dickinson 2003). Since then, most of Idaho's national forests have implemented plans to allow these fires where appropriate.

Wildland Fire Use is not appropriate everywhere, but it should be considered during the development of Fire Management Plans. By allowing some fires to burn, land managers can better focus on protecting homes, lives and property, reduce costs, restore forest health, and safeguard firefighters. With approved plans in place, managers have more flexibility to manage fires as conditions allow.

First, rangers or other land managers need land management plans to authorize Wildland Fire Use. Next, fire management plans must designate Fire Management Units where this strategy can be used. Finally, "Wildland Fire Use Guidebooks" must be adopted. Such guidebooks identify the

site-specific conditions and circumstances under which the strategy should be implemented. Even after such administrative hurdles are crossed, managers must address weather, social, economic, and political obstacles before a fire can be allowed to burn (U.S. Departments of Agriculture and the Interior 2005).

A national review identified several factors that affect Wildland Fire Use decisions (Williamson 2008). These factors include fire danger, location, timing, smoke concerns, public opinion and support from within the agency. Another key factor identified was the availability of resources to manage a Wildland Fire Use fire. Generally, special fire-use teams composed of at least seven specially trained members manage these fires. In 2006, the USDA Inspector General found that 300 fire-use managers were needed, while only 83 were available (U.S. Department of Agriculture 2006).

The same report found that Wildland Fire Use has the potential to reduce dead and downed trees and brush, thus controlling the future cost of fire suppression, which regularly exceeds \$1 billion annually. The report also recommended more flexibility in the management of Wildland Fire Use and suppression fires.



Fire teams on the Boise National Forest allowed the Trapper Ridge fire to take its natural course, improving forest health and keeping firefighters out of harm's way (photo courtesy of John McCarthy).

As a result of these and other recommendations, federal firefighting agencies are developing new direction for fire management. When fully implemented in 2009, the new policies will allow for different management approaches on the same fire. For instance, a portion of the fire can be managed as Wildland Fire Use while another portion is actively suppressed. In addition, fire teams will incorporate long-term planning into assessments carried out for every fire. By considering the potential for fires that may continue burning for months, fire teams can be much more strategic, effective and efficient.

Wildland Fire Use — Bureau of Land Management

While the Forest Service has made strides in updating plans to allow for the management of natural fires, the Bureau of Land Management has lagged behind. Thirteen years after the federal fire policy required agencies to consider the natural role of fire, the Bureau of Land Management has not authorized a single acre of Wildland Fire Use. This despite the fact that four of seven Bureau of Land Management fire management plans identify areas where Wildland Fire Use is suitable (Bureau of Land Management 2004a–g).

This is not to suggest that no progress is being made. In July 2008, the Bureau of Land Management amended land-use direction to begin establishing Wildland Fire Use areas that could cover up to 1.7 million acres in southeast Idaho (Bureau of Land Management 2008). But specific Wildland Fire Use guidebooks still need to be developed to implement changes on the ground.

Fire Severity

As rain and snow in the high country doused the 2007 fires, some pundits described the fires as “catastrophic” or “destroying thousands of acres.” Even as the fires continued to smolder, teams of Forest Service specialists reviewed effects of the fires and began to mitigate these effects. But checks on the ground found something far different than the early doom and gloom.

Land managers are particularly interested in the risk of erosion and mudslides following fires. Specially trained burned area emergency response (BAER) teams evaluate conditions, estimate runoff, and develop plans to reduce erosion and restore burned areas as needed. As part of their work, BAER teams analyze the severity of fires using aerial, satellite and on-the-ground observations.



Fires can lead to increased erosion (photo courtesy of Bureau of Land Management).

BAER reports detail the number of acres burned, the severity of the fires² (ranked as high, moderate, low or unburned), costs of suppression, miles of fire line, and impacts to important features such as municipal water sources, endangered species habitat, roads and trails (U.S. Forest Service 2007a). In addition, BAER reports identify critical measures to reduce erosion, prevent weeds and improve safety. Because bridges and culverts under roads and trails can become clogged with sediment and debris, BAER teams prioritize road and trail surveys. BAER treatments include replacing bridges and culverts and taking steps to protect soils and prevent erosion.

² Fire severity measures the impact of the fire on the soil surface. While this metric does not necessarily correlate directly with effects to vegetation, the acres of high, moderate, low and unburned soil severity represent the only consistently available data that evaluate fire impacts.

Agencies developed 20 BAER assessments of the Idaho's 2007 fire season, covering more than 1 million acres. Collectively, the BAER teams received nearly \$11 million to carry out post-fire activities.



Pine needles on the forest floor can significantly reduce erosion after fires (photo courtesy of Karen Wattenmaker).

The Idaho Conservation League collected and analyzed all BAER reports developed by Idaho's national forests after the 2007 fire season. The reports demonstrate that, while some local impacts were significant, the fires of 2007 generally burned naturally, well within the ability of Idaho's forests to respond.

We also considered whether the fires of 2007 represented a "catastrophe" or whether these fires burned within historic norms. The BAER teams found that, over the million acres of national forests, 24% burned at high severity, 24% burned at moderate severity, 31% burned at low severity and 21% did not burn at all (Table 1). In addition, reviews on the Murphy Fire Complex reported that 0% burned at high severity, 33% burned at moderate severity, 63% burned at low severity and 4% was unburned (Table 1).



Fires tend to burn in a patchy mosaic with varying levels of intensity, Boise National Forest (photo courtesy of Karen Wattenmaker).

Fires tend to burn in a natural patchwork, depending on weather, topography, tree species and other factors. Many of Idaho's higher elevation forests, dominated by lodgepole pine (*Pinus contorta*) and subalpine fir (*Abies lasiocarpa*), are adapted to infrequent, intense fires that replace the stands every 150 to 300 or so years. At lower elevations, many forests are dominated by ponderosa pine (*Pinus ponderosa*). Historically, these forests burned at lower intensities but much more often, generally every 15 to 35 years. In between is a mix of grand fir (*Abies grandis*), Douglas-fir (*Pseudotsuga menziesii*), western redcedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*) and white pine (*Pinus monticola*), as well as scattered ponderosa and lodgepole pine. These forests historically saw mixed severity fires burning every 35 to 100 years or so (Omi and Joyce 2003, Smith and Fischer 1997).

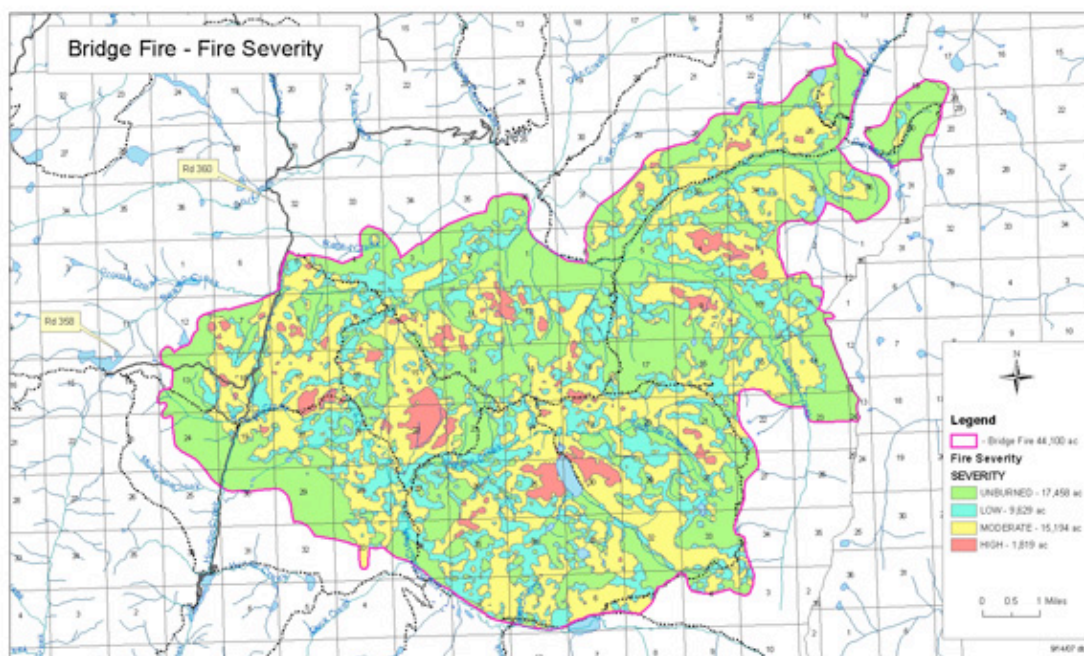


Figure 2 Map of fire severity on the Bridge Fire in the Clearwater National Forest (courtesy of USDA Forest Service)

On the Bridge Fire in the Clearwater National Forest, only 4% of the fire area burned at high severity (Table 1 and Figure 2), even though much of the area is relatively high-elevation forest composed of lodgepole pine and subalpine fir forests that tend to burn in stand-replacing, high-intensity fires. In contrast, on the portion of the Cascade Complex that burned in the Boise National Forest, 32% burned at high severity (BAER report 2007) (Figure 3), much of it in lodgepole pine forests.

Even with similar forest structure and weather conditions, we see quite different outcomes. The Clearwater National Forest is more lush than the Boise National Forest. As a result, sustained drought and high winds are generally needed to trigger big, stand-replacing fires there. On the more arid Boise National Forest, conditions that allow fires to spread rapidly and with higher intensity are more common. Anecdotal evidence from fire managers also indicated that smoke from extensive fires on the Payette and Boise National Forests created weather conditions (i.e., inversions with higher humidity and lower temperatures) that actually inhibited fire spread and intensity on the Clearwater and Nez Perce National Forests to the north. Similar inversion conditions also minimized fire intensity on the Boise and Payette National Forests.

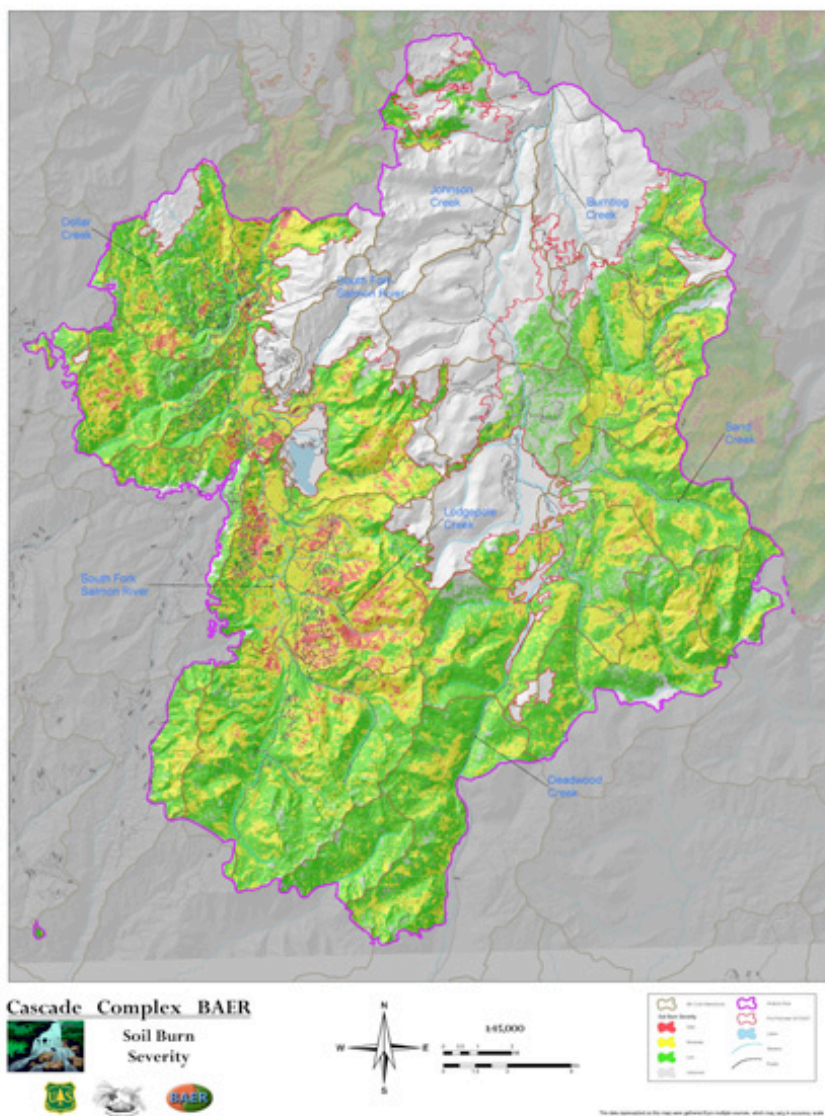


Figure 3 **Severity of the Cascade Complex burn (courtesy of USDA Forest Service)**

Generally, sustained droughts are needed before higher-elevation forests will burn. Because of the drought conditions of 2007, many higher-elevation areas were susceptible to large fires. As a result, the fires that gained momentum tended to be at higher elevations and burned larger areas. This situation is particularly true in the drier forests that characterize much of the Boise, Payette and Salmon-Challis National Forests. Based on historic data in Figure 4, fire severity was similar in Idaho during the widespread fires of 1988, 1994 and 2000, when 22%, 18% and 23% burned at high severity, respectively (U.S. Geological Survey 2008). It is no coincidence that these were also years when precipitation was below normal for the state.

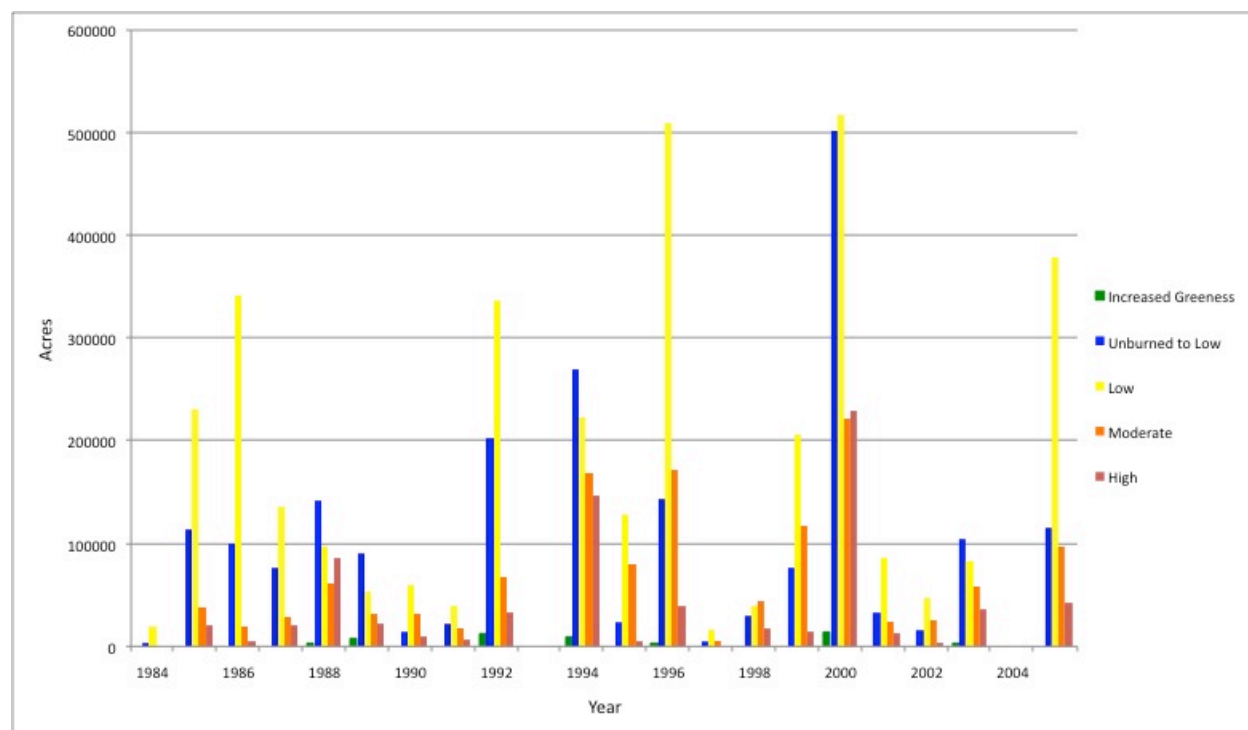


Figure 4 Historic burn severity in Idaho, 1984–2005

Due to decades of fire suppression, it is widely accepted that conditions in lower-elevation forests, dominated by ponderosa pine, have become denser and more susceptible to high-intensity fire. While true in some places, most of Idaho's forests do not fit this mold. Many are mixed forests at middle elevations. As a result, the effect of past fire suppression on today's fire behavior has not been clearly established over much of the state. One size does not fit all.

Research is also beginning to demonstrate the interrelation between climate change and wildfires. Westerling et al. (2006) found that fire seasons will start earlier in the spring and last longer into the fall because of global warming. Climatologists also expect that bark beetles will kill more trees because warmer winters allow beetles to thrive (Logan and Powell 2005, Logan et al. 2003). Changing conditions are also expected to change the makeup of our forests (Rehfeldt et al. 2006). Ponderosa pine forests may transition to grasslands, and lodgepole pine forests may extend higher into the alpine areas. Regardless of how, where and whether global warming may be playing a role in Idaho's fire environment, the approach should be consistent: prioritize fuels reduction around communities to reduce the risk of homes burning down, restore natural fires to the landscape to prevent future flare-ups, and control residential expansion into the wildland–urban interface through community planning. By strategically managing fires and planning for their occurrence,

we can respond to the impacts of global warming. Moreover, we must work together to reduce the pollutants that cause global warming in the first place.

Conclusion

Since the end of the last Ice Age, fires have burned in Idaho forests and rangelands. While human beings have always helped shape that fire, fire is also a natural process beyond humans' ability to fully control. Protecting human life and property is of the utmost priority, as are using tax dollars wisely and maintaining healthy land and water ecosystems. Idaho's growing population, development and global warming will continue to challenge the fire teams who control and manage fires.

The year 2007 in Idaho was remarkable for total acreage burned and total dollars spent. But even more important are the new fire-management tactics that were implemented. In the future, Idahoans would be wise to plan our communities well, thin our forests carefully and allow natural fires to help us where appropriate. When drought, wind and lightning combine, fire will be among us.



Low-intensity ground fires in low-elevation forests can clear out small trees and brush, while larger trees survive (photo courtesy of Karen Wattenmaker).

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Jonathan Oppenheimer, senior conservation associate with the Idaho Conservation League, is the organization's lead for fire policy issues. He has been involved with natural resource issues since 1994. As a member of the Western Governors' Association's Forest Health Advisory Committee, he helped develop the *10-Year Comprehensive Wildfire Strategy and Implementation Plan*. He is also a member of the Potlatch Corporation's Community Advisory Council and Inland Northwest Stewardship Contracting Monitoring Team. Previously, he worked as the director of the forest campaign at Taxpayers for Common Sense, a government watchdog group in Washington, DC. He is a graduate of the University of Montana School of Forestry.

About This Report

This report provides land managers, policymakers and the public with a review of the 2007 fire season in Idaho and evolving fire management strategies. The report also discusses the status of compliance with federal fire policy in Idaho and offers recommendations for more efficient expenditure of fire-management dollars and restoration of fire as an ecological process.

The Idaho Conservation League protects Idaho's clean water, wilderness and quality of life.